

UC Drought Response Report

to the Office of Governor Edmund G. Brown Jr.

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I. Executive Summary

Even before Governor Jerry Brown's declaration of a drought emergency for California, the University of California (UC) had brought its considerable research, extension, education, and operations expertise into play to help the state respond to this crisis. This report chronicles UC's contributions to the state's drought response.

UC's nationally-recognized leadership in environmentally sustainable practices includes a commitment to reduce per capita potable water consumption 20 percent by 2020. The policy requires all campuses to complete water action plans. The short-term actions in those plans serve as the basis for the immediate steps campuses are now taking in response to the drought crisis.

UC's immediate response to the drought falls into three general categories: irrigation; water use in buildings; and education and outreach. All campuses have committed to drought response actions; the most common actions include irrigation cutbacks, increased leak detection and correction efforts, and replacing older restroom fixtures with more efficient models. Campuses are communicating the urgency of this issue through letters to their communities from the Chancellors, educational websites, and signage posted in restrooms and elsewhere on campus. UC Merced Chancellor Dorothy Leland published an op-ed in the Fresno Bee, Modesto Bee, and Merced Sun-Star on her campus's water management leadership and related research.

UC's water expertise serves the state in multiple ways during this crisis. Online resources include a list of experts, which the media and policymakers repeatedly access. Over 200 articles in a variety of major media outlets including the *New York Times*, *Washington Post*, *Time*, *Businessweek*, and *Mother Jones* have included interviews with UC water and drought experts since early January 2014. UC's research and cooperative extension experts provide training throughout the state, especially for the hardest-hit farmers and ranchers, in how to improve water management and how to respond to the drought. This includes 15 events in just the first two and a half months of 2014, with many more planned for the spring and summer.

UC's leading drought experts will convene on April 25th in Sacramento for a UC Drought Summit (Summit) to discuss how best to manage current and long-term water shortages. UC collaborated with the Governor's Office and several legislative and agency staff to organize the Summit.

II. Campus Operations

A. Sustainable Water Systems Policy

UC is a leader in water efficiency and conservation practices. The University adopted a policy goal in 2013 to reduce per capita water use by 20% by the year 2020 compared to historical baselines at each campus. In the last 10 to 15 years, UC has already reduced its water consumption by more than 500 million gallons annually, enough to supply an entire average UC campus. Such reductions have entailed significant investment in projects such as central plant renewals, metering installations, and irrigation efficiency upgrades.

UC's 20% per capita water reduction goal parallels the State's requirements for local water agencies to set per capita potable water consumption reduction targets. Seven out of 15 campuses and medical centers have already achieved the goal, despite substantial growth in UC's building stock since the baseline years. Five of these campuses have set stretch goals in their Water Action Plans. UC Irvine, for example, set a stretch goal of reducing both per capita potable water consumption and landscape irrigation by 30 percent by 2020.

Each campus and medical center is completing Water Action Plans that outlines strategies to meet or go beyond the 2020 target. The Water Action Plans include sections on the following topics:

- The applicable types of water use, including but not limited to potable water, non-potable water, industrial water, sterilized water, reclaimed water, stormwater, and wastewater;
- Consideration of more stringent potable water reduction goals if the location has already achieved a 20% below baseline reduction in per capital potable water consumption;
- Location-specific strategies for achieving the target for reduced potable water consumption, with a cost analysis to support the implementation of those strategies;
- Use of non-potable water sources, and how those sources factor into overall sustainable water systems strategy; and,
- Education and outreach, including engagement and behavior change of student, faculty, and staff and living laboratory opportunities that use the campus to pilot new technologies or programs.

Six campuses have already finalized their plans: UC Berkeley, UC Irvine, UC Los Angeles, UC San Diego, UC Santa Barbara, and UC Santa Cruz, which are publically accessible at

<http://sustainability.universityofcalifornia.edu/water-action-plan.html>.

B. Drought Response Measures

Drought response measures build upon the extensive sustainable water management practices that have already reduced UC's water consumption enough to supply an entire UC campus with its annual water needs. To take just one campus as an example, at UC Merced every building is LEED-certified with a rating of Silver or higher, resulting in 40 percent less building water use than comparable building stock. The UC Merced campus remains the only U.S. college campus where 100 percent of the buildings are LEED-certified. Those buildings typically earn 80 percent of the available LEED credits for water efficiency. Additionally, the youngest UC campus has already won 25 awards for sustainable planning and design.

In 2011, UC Merced began using wireless data sensor technology to provide real-time capture of 100 percent of the campus's water use. Currently, the campus has over 50 sensors monitoring irrigation, building and industrial water meters throughout campus, enabling real-time, 24/7 leak detection throughout campus. The campus's water data sensors are also used by students for classroom projects and residence hall water conservation competitions. UC Merced conducted its first residence hall water conservation competition in 2011. This annual competition raises student awareness about water conservation and efficiency. Nearly one quarter of UC Merced undergraduate students have participated in one or more water conservation competitions. The fall 2013 competition involved almost 2,000 students and generated a 10 percent reduction in potable water use during the month-long event.

All campuses and medical centers have already taken a number of measures to reduce their water use in response to the drought. The actions described below and listed in Appendix A are a current snapshot as of April 15, 2014. Additional actions will likely be added as campus drought task forces and working groups continue to evaluate near-term water reduction opportunities.

After many years of implementing efficiency improvements to landscape water irrigation practices, irrigation now makes up a minority of potable water consumption on most UC campuses. However, due to the visibility of water consumption for landscape irrigation, irrigation drought response measures are still a priority. While most campuses use state-of-the-art efficient irrigation technology for the majority of landscaped areas on campus and all campuses have expanded the use of native and drought-resistant plants, expanding these best practices offers opportunities to further reduce water consumption. Eight campuses and medical centers are cutting back on the number of irrigation cycles, and stopping irrigation completely on certain turf areas, allowing them to go dormant over the summer. Five campuses are adopting more sophisticated and efficient irrigation methods for high water-use areas. UC Berkeley, UC Davis, UC Irvine, and UCLA are transitioning certain irrigated areas away from turf grass altogether, replanting them with native and drought-tolerant species. Other irrigation reduction measures include switching from potable to non-potable water sources, replacing grass with artificial turf on recreation fields, and expanding soil and ground cover to retain soil moisture. Campus-specific irrigation measures are listed in Table 1 of Appendix A.

Buildings and campus power plants represent the largest water end uses on most UC campuses. Ten campuses and medical centers are upgrading restroom, kitchen, and/or laboratory fixtures to more efficient models or ensuring that existing fixtures are operating within specification. Five campuses are focusing on ways to reduce cooling tower water use; UC San Diego Medical Center and UC Santa Barbara are transitioning to reclaimed water in their cooling towers. UC Davis, UCLA, UC Santa Barbara, and UC Santa Cruz are adopting more water-efficient cleaning methods. Campuses are also addressing water used for research—UC Irvine is conducting a laboratory water audit, UC San Diego and UC Santa Barbara are installing tempering devices in autoclaves (sterilization devices) to reduce cooling water for discharge, and UC San Diego is consolidating existing animal cage wash services. Campus-specific building-water-use reduction measures are listed in Table 2 of Appendix A.

Other drought response measures cannot be categorized neatly into landscape or building water use. For example, UC Davis campus and medical center have each completed a comprehensive Drought Action Plan, and UC Irvine Medical Center and UC Santa Cruz are conducting campus-wide water audits. Ten campuses and

medical centers have increased their leak detection and correction programs. All other campus-specific drought response measures are listed in Table 3 of Appendix A.

In addition to reducing water use on campus, UC campuses are communicating the urgency of the drought and educating their communities on water conservation measures that each individual can take. Eight chancellors have sent drought response letters to their campus communities and eight campuses have established website specifically addressing the drought and providing water conservation tips. Eight campuses have initiated outreach campaigns such as student-run water conservation competitions in the residence halls and branded signage in restrooms and other public spaces. Broadening its educational message beyond the campus itself, UC Santa Barbara arranged to screen an educational water conservation film trailer in local movie theaters. UC Berkeley, UC Davis, and UC Santa Cruz have turned off one or more of their ornamental fountains as a visual reminder of the state's drought emergency. Specific education and outreach measures by campus are listed in Table 4 of Appendix A. Examples of campus outreach materials are provided in Appendix B.

III. Education, Research and Public Service

A. Summary of Drought-Related Events, Information, and Media Coverage: January-March 2014

In the midst of historic drought, California's academic institutions serve as a tremendous resource both in offering everything from near-term management advice to farmers and ranchers to the innovative work being carried out by researchers on a vast array of issues from drought resistant crops to snow sensors to climate change.

UC's Division of Agriculture and Natural Resources (ANR) houses the [California Institute for Water Resources \(CIWR\)](#), whose mission is to integrate California's research, extension, and education programs to develop research-based solutions to water resource challenges. The Institute developed a set of [drought webpages](#) in early January to extend the research and extension work being done on drought from around the UC system, as well as by California's other academic institutions, to communities throughout California and beyond. The sections below summarize some the activities completed since early January.

B. [UC Drought Science, Policy and Management Summit – April 25, 2014](#)

The UC Drought Science, Policy and Management Summit at the State Capitol will bring together a wide range of experts from across the state for thoughtful discussion of California's drought and water supply issues. Experts will engage with water managers and policymakers on how best to manage current and long-term water shortages. Topics range from agricultural production and employment to wildfires, public health and welfare, the economy, energy production and use, fish and wildlife, and water conservation. The event also will include a review on what university campuses are doing to conserve water and provide water-saving advice for residents, farmers and business owners. The UC Davis Center for Watershed Sciences organized the Summit in collaboration with the Governor's Office, several legislative and agency staff, and with faculty and research centers from all UC campuses as well as other California universities.

C. Training Seminars and Educational Events

UC responded immediately to the drought by organizing training seminars and other educational events throughout the state. The list below provides a sample of the types of educational events that UC and ANR have held through the end of March. Many of the early drought impacts were first felt by the communities that ANR serves such as ranchers and farmers. At least 100 people attend most of these events, if not more (specific attendance numbers have been noted where possible). Many of UC's events have also been video-recorded and made available on the web. There have also been campus-based events on various aspects of the drought.

UC's drought webpage is continuously updated with events—as of April 9, there were 15 events scheduled for the month of April alone. A full list of UC's drought events, including upcoming events, [can be found here](#). UC partnered with the California Department of Water Resources (DWR) to assist DWR with its response to the drought. DWR funding through this partnership made several of the events above possible.

UC-Organized Drought Events: January-March 2014

1. January 27 & 31: [Drought management for rice](#) in Richvale, Glenn, Colusa, and Yuba City
2. January 28*: [Drought management for almonds](#) in Merced (attendance 150)
3. January 29*: [Mitigating drought - optimizing pasture and supplemental feed and managing risk](#) at the Sierra Foothills Research and Extension Center (covered in the [New York Times](#), [video online](#)) (attendance 300)
4. February 4-5*: [California Plant and Soil Conference](#) in Fresno - many sessions on state-wide issues including irrigation, salinity, and drought ([video online](#)) (attendance 200)
5. February 6*: [2014 North San Joaquin Valley Almond Day](#) ([video online](#))
6. February 6: Regional Sweet Potato Meeting in Merced
7. February 11-14: [Free workshops on water and drought](#) in Tulare
8. February 12*: [Irrigation and Nutrient Management Meeting](#) in Salinas (attendance 100)
9. February 21: [Sonoma County Drought Workshop: Vineyards, Orchards and Crops + Livestock, Dairy and Rangeland](#)
10. February 22-23: [Lake County UC Master Gardener Drought workshop](#)
11. February 27: [Citrus trees, deficit irrigation and efficient use of water](#) in Tulare
12. February 28: [Drought workshop for farmers and ranchers](#) in Vinton
13. March 5: [Placer-Nevada Farmer-Rancher Drought Meeting](#)
14. March 6: [Quad-County Walnut Institute meeting](#) in Stockton
15. March 11*: Almond Drought Meeting in Kerman
16. March 15:
 - a. [EDIBLES: After the Frost and During the Drought - A Public Seminar and Panel Discussion](#) in Corte Madera
 - b. [Waterwise Landscaping: Designing a Drought-tolerant & Deer-resistant Landscape & Garden](#) in Weaverville
17. March 17: [Living Green: Water in the desert: It's not a dry subject. Yet.](#) at UC Riverside
18. March 18: [Walnut Update](#) in Lakeport
19. March 19: [Drought Workshop for Commercial Orchard and Vegetable Growers](#) in Auburn
20. March 20: [Master Gardener Training - Water Management](#) in Susanville
21. March 20-21*: Pomology Education Conference in Davis with special session on drought - [Video now available](#)
22. March 21: [Irrigating Field Crops in a Water-Short Year](#) in Tulare
23. March 22:
 - a. [Toward Sustainable Gardening: Rainwater Harvesting & Greywater Reuse](#) in Placerville
 - b. [Drought Ready?](#) in Cloverdale
 - c. [Edible Landscape & Drought Conditions](#) in Merced
 - d. [Master Gardener Drought Workshop](#) in Fairfield
 - e. [Waterwise Irrigation for the Garden](#) in Davis
24. March 24: [Livestock Management During Drought](#) in Auburn
25. March 26:
 - a. [Drought Management for Citrus](#) in Auburn
 - b. [Drought Management for Orchards](#) in Auburn

- c. [Water Management in Strawberry: Field Day](#) in Ventura

26. March 29:

- a. [Food Gardening in a Drought Year](#) in Santa Rosa
- b. [Gardening During Drought](#) in Clearlake
- c. [Water Efficient Gardening in the Urban Landscape](#) in Placerville

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Further educational resources include an [online drought and water seminar series](#) with talks by UC experts on timely, relevant topics. These serve to further extend the benefits of research done in the UC system to as wide a variety of communities as possible.

D. Online Resources

CIWR gathered practical drought-related resources from across the UC system that have been of immediate use in agriculture, rangelands, and home and commercial landscape management. In addition, CIWR also gathered a wide variety of tools, including [SierraNet](#) real-time hydrological data and a [virtual tour](#) of California's water system, developed by researchers throughout the UC system. In addition, UC ANR makes many of its water conservation resources [available in Spanish](#).

A full list of UC's drought resources [can be found here](#).

E. Long-Term Impacts

Drought is not new to California. UC has been helping California and Californians adapt to drought for decades. UC's research and outreach programs reach agricultural producers, residential homeowners, landscapers, water supply system managers, and more. UC has been integral to increasing the efficiency of how California manages its water from the source to the end user.

UC ANR has been helping California agriculture (the state's largest water user) manage water for decades. UC first introduced drip irrigation technologies to California agriculture in the late 1960s. Since that time UC researchers have perfected micro-irrigation systems and optimized management. This has led to great improvements in agricultural water use efficiency. For example, when drip irrigation technologies were first introduced to tomato farming in the early 1990s, processors rejected the products due to low quality (though yields had increased). In the 1990s and early 2000s, UC-led research and outreach on management of these highly efficient irrigation systems led to widespread adoption of drip irrigation in the industry. Today, over 85% of California's processed tomatoes are grown with drip irrigation. This transition helped achieve an increase in yields of almost 35% and a decrease in water use of approximately 25%. Overall, irrigation efficiency has increased by 54% and the industry reduced water use by over 60 billion gallons per year. While reduced water applications do not always lead to equal reductions in water consumption (due to reductions in return flows to stream or groundwater aquifers), these reductions in water application do have net positive water savings and provide additional benefits in terms of increased grower profits and decreased energy usage.

Similar savings have resulted from UC research and educational outreach on almonds, pistachios, walnuts, wine grapes, lettuce, strawberries, alfalfa and more.

In addition to its work with the agricultural industry, UC ANR impacts homeowner and landscaper water use through its Master Gardener and landscaper research and outreach programs, covering increased irrigation system efficiency, better irrigation management, and drought-resistant landscaping.

F. Media Coverage

As soon as it became clear that California would enter 2014 in the midst of severe drought, UC compiled a list of [UC drought and water experts](#) from across the UC system, with every campus represented. At this point, over 200 articles in a variety of major media outlets including the *New York Times*, *Washington Post*, *Time*, *Businessweek*, and *Mother Jones* have included interviews with UC water and drought experts since early January 2014.

Highlighted coverage:

- [Severe Drought Has U.S. West Fearing Worst](#) - UC ANR advisor Jeremy James in the *New York Times*
- [Hundred Years of Dry: How California's Drought Could Get Much, Much Worse](#) - UC Berkeley Lynn Ingram in *Time*
- [Amid drought, California and other Western states gird for a landmark year in forest fires](#) – UC Merced professor Tony Westerling in the *Washington Post*
- [Brown is the New Green](#) – UC ANR advisor Chuck Ingels in the *New York Times*
- [Drought May Force California to Move Salmon by Truck](#) – UC Santa Cruz professor Lisa Sloan in *Newsweek*

A full list of UC media coverage [can be found here](#).

Appendix A

UC Drought Response Measures by Campus

Table 1 - UC Drought Response Measures by Campus: Irrigation

Campus	Drought Response Measures - Irrigation
Berkeley	<ul style="list-style-type: none"> • Reducing irrigation by 50% • Using well water for wash downs • Pursuing grant for five additional weather stations • Converting lawns to native/drought tolerant species • Increasing water flow efficiency at Botanical Gardens, which will reduce flow by 40-50% • Investigating allowing some large passive use lawns to go dormant over summer
Davis	<ul style="list-style-type: none"> • Reducing watering frequency within selected turf areas • Changing watering frequency and retrofitting irrigation within the Mediterranean collection at the UC Davis Arboretum • Converting turf grass to native / drought-tolerant species: <ul style="list-style-type: none"> ○ La Rue Road landscape corridor ○ Landscapes around parking lots • Analyzing additional possible landscapes for retrofit, and analyzing potential for accelerating planned landscape changes • Discontinuing practice of supplemental summertime water in east end of Arboretum Waterway
Davis Medical Center	<ul style="list-style-type: none"> • Reducing landscape irrigation from an annual average of 2.3 cycles per week to one cycle per week, saving approximately 34 million gallons (14.7%) of water per year
Irvine	<ul style="list-style-type: none"> • Determining feasibility of transitioning three areas of Student Housing from potable water irrigation to reclaimed water irrigation • Identifying non-functional turf areas for conversion to drought -tolerant species
Los Angeles	<ul style="list-style-type: none"> • Irrigation cutbacks • Installing drip irrigation at UCLA Housing sites • Identifying opportunities to switch to drought tolerant species at UCLA Housing sites • Expanding mulch and ground cover to maintain moisture in the soil at UCLA Housing sites • Identifying planter areas that experience runoff and adjust irrigation to prevent runoff at UCLA Medical Centers
Merced	<ul style="list-style-type: none"> • Allowing existing campus drought-tolerant, low water-use landscapes to return to intended state. • Evaluating turf irrigation on Quad and playfields. • Stopping irrigation of decorative turf areas that do not support active and passive activities—for example, turf areas between the curb and the sidewalk—and plan for their replacement.
Riverside	<ul style="list-style-type: none"> • Switching irrigation water for Botanical Gardens from potable to non-potable, reducing potable water use by 22 million gallons a year • Evaluating UCR Botanical Gardens current irrigation system and practices to look for efficiencies • Relining our two major reservoirs at Agricultural Operations to fixed apparent leaks
San Diego	<ul style="list-style-type: none"> • Installing artificial turf in Muir Field, saving an estimated 2 million gallons of water per year
San Diego Medical Center	<ul style="list-style-type: none"> • Changing irrigation from every day to every other day
Santa Barbara	<ul style="list-style-type: none"> • Reducing irrigation by 50-100% depending on the location • Installing Hunter MP rotators at the University House, University Center south lawn, and West Campus Family Student Housing • Converting overhead spray heads to drip system in most of the shrub beds throughout Housing • Extending recycled water infrastructure: The recycled water main line will be extended to the edge of University Center, supplying the landscapes at College of Creative Studies, Psychology, Psychology East, San Rafael Residence Hall, and Santa Rosa Residence Hall with recycled water. Another project will extend the line to Pearl Chase Park
Santa Cruz	<ul style="list-style-type: none"> • Reducing irrigation of landscape plants, lawns and playing fields • Reducing athletic tennis court washings • The campus farm is piloting use of data loggers and tension meters for pairing daily soil moisture sensing with crop-specific evapotranspiration data to quantitatively assess crop water needs at each specific stage of growth
LBNL	<ul style="list-style-type: none"> • Confirming compliance with landscape watering policy, which prohibits ongoing irrigation after an initial establishment period

Table 2 - UC Drought Response Measures by Campus: Buildings

Campus	Drought Response Measures – Building Water Efficiency
Berkeley	<ul style="list-style-type: none"> • Upgrading restroom fixtures to more efficient models • Developed a prioritized list of heat exchangers and pumps in need of repair • Surveyed all cooling towers and documented their performance and water treatment strategy
Davis	<ul style="list-style-type: none"> • Resume a program of preventative maintenance on restroom fixtures • Prioritizing energy projects that lead to water savings due to reduced demand for chilled water • Replacing five remaining water softeners with scale blasters, resulting in savings of approximately 10,000 gallons per year • Spot pressure washing as needed instead of scheduled routine area washing • Deploying 20 additional C3 machines that are used to clean restrooms and replace mop buckets • Investigating increased recirculation of cooling tower blow-down water • In Dining: <ul style="list-style-type: none"> ○ Keeping lids on boiling water during slow times ○ Keeping pasta cookers at a simmer rather than a rolling boil ○ Using dry cleaning techniques (broom and mop) rather than spraying water to clean floors or using a water broom instead of a hose ○ Serving water to campus restaurant guests only on request ○ Pre-soaking and washing items in basins of water rather than under running water ○ Only washing full loads in the dishwasher
Davis Medical Center	<ul style="list-style-type: none"> • Use composting in lieu of garbage disposers
Irvine	<ul style="list-style-type: none"> • Expanding plumbing retrofits to post-1994 buildings • Identifying and eliminating remaining once-through cooling systems • Performing lab buildings water use audit
Los Angeles	<ul style="list-style-type: none"> • Replacing 3,390 toilets with more efficient models, saving 15 million gallons of water annually • Reducing power washing in front of restaurants to an as-needed basis for spills and stains; using water brooms when power washing is a necessity • Working with vendors to identify scrubbers that reclaim up to 70% of water in the campus power plant • Coordinating water use inspections and maintenance with regular facility inspections/preventative maintenance activities • Performing basic visual/audible leak detection survey of the primary steam distribution pipes and steam traps, replacing faulty traps with effective, low-maintenance units, and developing a steam trap inspection plan at UCLA Medical Centers
Merced	<ul style="list-style-type: none"> • Ensuring all campus water fixtures and systems are operating within specification
Riverside	<ul style="list-style-type: none"> • Ensuring campus water fixtures and systems are operating within specification
San Diego	<ul style="list-style-type: none"> • Retrofitting water fixtures with low flow devices in 25 buildings, saving an estimated 10 million gallons of water per year • Installing flow control valve in Eleanor Roosevelt College residential bathrooms, saving an estimated 2 million gallons of water per year • Retrofitting kitchen dish room with low-flow pre rinse spray valve and educating staff accordingly, saving an estimated 1 million gallons of water per year • Retrofitting urinal flush valves in the remaining Sports Facilities buildings, saving an estimated 200,000 gallons of water per year • Replacing/rebuilding shower valves and installing low-flow shower heads • Installing low flow laboratory and lavatory aerators • Consolidating existing animal cage wash services, saving an estimated 18.5 million gallons of water per year • Installing tempering devices in autoclaves to reduce the use of water to cool discharge water
San Diego Medical Center	<ul style="list-style-type: none"> • Installing water-efficient faucets and shower heads, saving an estimated 2 million gallons of water annually • Converting to reclaimed water in cooling towers in June 2014
Santa Barbara	<ul style="list-style-type: none"> • Upgrading restroom fixtures to more efficient models, saving an estimated 20 million gallons of water annually • Replacing water-intense cleaning equipment/techniques with water-efficient or water-recirculating equipment/techniques

	<ul style="list-style-type: none"> Improving monitoring and management of industrial water infrastructure: cooling towers, chilled water, and steam Using reclaimed water in cooling towers Installing low-flow lab aerators Installing tempering devices in autoclaves to reduce use of water to cool discharge water Hiring preventative maintenance plumber to catch leaks and inefficiencies early on
Santa Cruz	<ul style="list-style-type: none"> Installing low-flow aerators on all kitchen and restroom faucets in dining halls Inspecting low-flow flush valves and tank toilet fill hardware for correct operation and repairing or replacing as necessary Inspecting showers and lavatories to confirm that water-saving nozzles and aerators are still in place and replacing as necessary Daily monitoring of the Fixit work order system to identify water leak complaints and repairing or shutting off immediately Reducing the amount of water used by Physical Plant custodians to clean showers in residence halls by changing the practice of rinsing walls and floors with hoses to less water-intensive methods Including employee housing developments in physical plant water meter replacement project Replacing toilet fixtures with ultra-low flow units in Merrill Residence Halls C and D Replacing existing toilets or flush valves with 1.28 gpf units and urinals with "Pint" flush valves in dining facilities
LBNL	<ul style="list-style-type: none"> Consolidating available data to facilitate operational management of cooling tower water

Table 3 - UC Drought Response Measures by Campus: Other

Campus	Drought Response Measures – Other
Berkeley	<ul style="list-style-type: none"> Improving leak detection and prioritizing repair Adding new meters to monitor water consumption
Davis	<ul style="list-style-type: none"> Developing comprehensive Drought Response Plan: http://sustainability.ucdavis.edu/local_resources/docs/drought_response_action_plan_april_2014.pdf Accelerating and expand leak detection programs
Davis Medical Center	<ul style="list-style-type: none"> Developing comprehensive Drought Response Plan Tracking down and repairing leaks in underground piping and evaluating the expansion of leak detection programs
Irvine	<ul style="list-style-type: none"> Improving leak and runoff notification response by incorporating text messaging Identifying opportunities for improved monitoring Initiating campus-wide water audit
Irvine Medical Center	<ul style="list-style-type: none"> Conducting a water audit
UCLA	<ul style="list-style-type: none"> Establishing procedures to record facility water meters on a monthly basis or more Improving leak detection
Merced	<ul style="list-style-type: none"> Refreshing the report-a-leak campaign
San Diego	<ul style="list-style-type: none"> Connecting reclaimed water to East Campus Utilities Plant, saving an estimated 10 million gallons of potable water annually
San Diego Medical Center	<ul style="list-style-type: none"> Repairing leaks
San Francisco	<ul style="list-style-type: none"> Forming of Drought Emergency Task Force to identify water conservation efforts
Santa Barbara	<ul style="list-style-type: none"> Conducting a water audit Improving leak detection and prioritizing repair Monitoring and reporting water consumption to end users
Santa Cruz	<ul style="list-style-type: none"> Giving maintenance priority to reported water leaks, including HVAC mechanical systems Monitoring and reporting water consumption to end users Conducting a water audit Washing vehicle fleets with newly installed closed looped recirculated washing facility.
LBNL	<ul style="list-style-type: none"> Establishing leak detection and runoff reporting program

Table 4 – UC Education and Outreach Measures

Campus	Education and Outreach Measures
Berkeley	<ul style="list-style-type: none"> • Drought response letter from Chancellor to campus community (See Appendix B for copies of each letter) • Website on drought / water reduction measures: http://sustainability.berkeley.edu/drought-alert • Signage in restrooms and across campus (see Appendix C for examples of posters from various campuses) • Botanical Garden highlighting drought tolerant plants and home gardening tips • Turned off largest ornamental fountain
Davis	<ul style="list-style-type: none"> • Drought response letter from Chancellor to campus community • A comprehensive communication, education and outreach campaign, with Strategic Communications and other participating units. • Website on drought / water reduction measures: http://drought.ucdavis.edu, http://eco.ucdavis.edu/water • California Water Blog: http://californiawaterblog.com/ • Turning off all campus fountains • Installing “report-a-leak” stickers • Investigating creating behavioral programs for offices, labs, and student housing, and amplify promotion of existing education and outreach programs, such as Arboretum Valley-wise gardening education • Outreach in Residence halls: <ul style="list-style-type: none"> ○ Water reduction tips in newsletters and social media ○ Email blasts ○ Programs and tabling regarding water conservation ○ Water conservation as a topic for spring neighborhood meetings ○ Signs in restrooms and laundry rooms ○ Table tent cards in the dining commons ○ Resident Advisor bulletin boards ○ Slides for LCD monitors • Door hanger or printed handout in each room for summer conference and orientation guests • Updated Arboretum & Public Garden blog with information on water reduction actions • Sustainability Showcase at Arboretum highlighting native and drought-tolerant landscapes: https://www.flickr.com/photos/goodlifegarden/sets/72157643812362784
Irvine	<ul style="list-style-type: none"> • Website on drought / water reduction measures: http://www.ucchm.org/droughtresponse • Students in Earth System Science are asking people to pledge a 20% personal reduction use while also providing water savings tips through online social networking
UCLA	<ul style="list-style-type: none"> • Website on drought / water reduction measures: http://www.sustain.ucla.edu/our-initiatives/water/drought/ • Drought response letter from Chancellor to campus community • Developing signage in residence and dining halls on drought and water reduction facts
Merced	<ul style="list-style-type: none"> • Website and Facebook page on drought / water reduction measures: http://sustainability.ucmerced.edu/sustainable-campus-features/water; https://www.facebook.com/ucmsustainability • Drought response article in <i>The Fresno Bee</i>, <i>Merced Sun Star</i>, and <i>The Modesto Bee</i> by Chancellor • Drought awareness and conservation campaign
Riverside	<ul style="list-style-type: none"> • Drought response letter from Chancellor to campus community • Lecture series on California water (http://palmdesert.ucr.edu/programs/Green2013.html)
San Diego	<ul style="list-style-type: none"> • Website on drought / water reduction measures: http://sustainability.ucsd.edu/highlights/drought.html • Drought response letter from Chancellor to campus community: http://adminrecords.ucsd.edu/Notices/2014/2014-4-2-1.html
San Francisco	<ul style="list-style-type: none"> • Drought response letter from Associate Chancellor to campus leadership • Signage in restrooms and across campus

Santa Barbara	<ul style="list-style-type: none"> • Drought response letter from Chancellor to campus community: http://www.sustainability.ucsb.edu/wp-content/uploads/Drought-Emergency-Letter.pdf • DigiKnows (rotating PowerPoint slides displayed on digital screens in Residence Halls and Dining Commons) throughout the month of April will focus on how students can conserve water • Informational Posters • Educational water trailer about UCSB in the local theaters • Disseminating weekly water savings tips to the campus community through listserves • Partnering with student organizations, such as the Environmental Affairs Board on education and outreach efforts • Drought Reminders and water conservation tips on the Entrance Electronic Kiosk during the month of April
Santa Cruz	<ul style="list-style-type: none"> • Drought response letter from Chancellor to campus community • Website on drought / water reduction measures: http://sustainability.ucsc.edu/topics/drought/index.html • Turning off campus ornamental water fountains • Supporting the Drop Your Own Drip outreach program in spring 2014 • Tabling events at the colleges in spring 2014 and as part of campus orientation programs • Dining table tent cards containing water conservation and use information • Installation of bathroom mirror clings and refrigerator magnets in residential facilities • Rotating display of a "Please Conserve Water" banner at various locations on campus • Distributing conservation posters to campus mail rooms and dining commons • Distributing and promoting shower timers to residents in spring 2014 • Outreach to summer conference guests: <ul style="list-style-type: none"> ○ Notices in Policies and Procedures Handbooks issued to Conference Organizers ○ Conservation awareness language on folded maps ○ Including water conservation language to our "Quick Facts" flyer placed in each apartment occupied by adult groups ○ Adding water conservation language to Conference Services web site ○ Prominently placing posters check-in locations
LBNL	<ul style="list-style-type: none"> • Website on drought / water reduction measures: https://commons.lbl.gov/display/SBL/Water • Earth Day teams of volunteers will conduct bathroom fixture audits and ground-check fixture inventories to refine the scope for subsequent fixture retrofits led by Facilities

Appendix B

Examples of Campus Outreach Materials

Examples of UC Berkeley Outreach Materials

CalMessage: "Berkeley Intensifies Efforts on Drought Emergency," February 5, 2014

Dear Campus Community,

I know that we all share serious concerns about the current lack of rainfall this year and want to do our part to ensure everyone on our campus is helping to reduce our water consumption and conserving resources.

Even though Berkeley has been reducing water consumption for years, the campus research on the severity of the drought overwhelmingly sends a clear call to action.

As early as 2011 – before the current drought – our campus set a goal to reduce potable water use to 10 percent below 2008 levels by 2020. Through efforts to date, we are already past the halfway mark toward that goal, and campus use is down a total of 17 percent since 1990, even given the growth in campus facilities in that same timeframe.

However, given the severity of the current situation, we must do more.

To address the short-term urgency of the problem I am asking everyone to use less water in your daily routines. A coordinated public awareness campaign will launch soon with information about simple actions that can make a difference. We are already hearing many of these suggestions such as turning off the faucet when washing hands or reporting leaks (through the campus water conservation hotline, 643-0890). We will strive to turn reminders into commitments, and commitments into habits, so that we can all contribute to lessening the impact of this and future droughts.

Can these individual actions add up to enough savings? At least half of the water consumed on campus and in our homes is domestic (toilets, showers, etc.), so changes in our daily routine are an essential part of a response to a drought emergency. Shortening showers by 5 minutes can save 12 gallons or more, and turning off the faucet while washing your hands can save 1/2 gallon. **If everyone saved a gallon of water a day, weekly campus use could be reduced by 250,000.**

Looking to the future, I have asked the campus Office of Sustainability to work with campus departments to intensify efforts and identify additional water efficiency opportunities. This analysis will build on and enhance existing work (especially at Physical Plant-Campus Services) but will also look more broadly, focusing on equipment and procedures with the greatest potential for water reduction. The information that is gathered will be used to prepare our campus for the possibility of an extended drought and can also contribute to renewed efforts.

Current campus reduction projects (both completed and currently planned) include reducing the water used by toilets and condensate leak repairs. There have also been reductions due to fixture upgrades in renovations and new buildings, and the creation of new habits affecting water use. For example, almost 98% of irrigation systems are automated and connected to a weather station. In addition, water use in residence halls, adjusted for the number of residents, has declined by over 35 percent in the last 10 years.

As the work to identify new opportunities proceeds, we will continue to monitor drought assessments and the impact of any late season rains. Additional steps may be announced in coming months, especially if the campus water provider, East Bay Municipal Water District, enacts any water restrictions.

Sincerely,
Nicholas B. Dirks
Chancellor

EVERY DROP COUNTS

TIPS FOR GENERAL CAMPUS

office, lab,
classroom,
gym



Turn off the water while washing your hands.



Take shorter showers.



Wash labware in basins, in full loads, or without continuous water flow.



Report leaky faucets and toilets
On campus, call **(510)642-1032**.

TIPS FOR WHERE YOU LIVE

residence hall,
house,
apartment



Take shorter showers.

Install low-flow faucet aerators and showerheads.

Turn off the water while washing your hands, shaving or brushing your teeth.



Run dishwashers and washing machines with full loads, cut back on rinsing if your dishwasher is new.



Fix leaky faucets and toilets.



Wash fruits and vegetables in a pan of water rather than running the tap.

MORE TIPS + DETAILS ONLINE:

sustainability.berkeley.edu

Examples of UC Davis Outreach Materials

From: Office Of The Chancellor [<mailto:OfficeOfTheChancellor@ucdavis.edu>]

Sent: Thursday, April 10, 2014 2:15 PM

To: UC Davis Faculty and Staff

Subject: What makes UC Davis cool?

Dear Colleagues:

Being "cool" is not one of our formal priorities at UC Davis, so it may be somewhat unusual that we trumpet being named one of the ten "coolest" schools in the country. But it is not our taste in music or fashion that makes us cool. Rather it is our national and international leadership in environmental sustainability. Each year, *Sierra* magazine, the national publication of the Sierra Club, surveys colleges and universities nationwide to gauge environmental stewardship on the nation's campuses. In a nod to the fight against global warming, they title their rankings the "[Ten Coolest Schools](#)." Due to our groundbreaking efforts in sustainability, we have made the top ten in the nation the last three years, including one year as [#1](#).

Sustainability at UC Davis draws on the strengths and efforts of our entire university. Exemplified in our [Sustainable 2nd Century initiative](#), led by our [Office of Environmental Stewardship and Sustainability](#), we take a comprehensive approach that suffuses our education, research and public service missions and reaches across all disciplines and programs. From the [plug-in hybrid car](#), [advances in sustainable agriculture](#) and [high-efficiency lighting](#) to [West Village](#), [Aggie Stadium](#) and the [Arboretum](#) (and of course the ubiquitous bikes that so symbolize our campus), everything about UC Davis typifies our efforts to make the world greener, cleaner and, yes, cooler.

On April 22, we will add a new chapter to the UC Davis legacy of environmental sustainability when we formally open the [UC Davis Renewable Energy Anaerobic Digester](#).

Built from technology developed by faculty member, Ruihong Zhang, this new facility will ultimately process 50 tons of waste each day and turn it into clean, renewable electricity powering our campus. To get a real sense of our unique sustainability efforts and the role of the new biodigester, I invite you to view this new [video](#) that shows how UC Davis is taking student-grown vegetables such as cabbage and kale, turning them into nutritious meals in our dining commons and then transforming the leftover waste into energy via the biodigester. This farm-to-fork-to-fuel process is unique to UC Davis and affirms our profound commitment to sustainable practices.

No message about sustainability would be complete without talking about the drought in California. Over the coming weeks and months, we are enhancing our ongoing water efficiency efforts to immediately decrease our water usage along with initiating an on-campus awareness campaign. In addition, building from our international leadership in water sciences and water management, we have launched a new [website](#) featuring the latest drought news, research and insight from renowned experts and tips for practicing sustainable living. Also, the [UC Davis Center for Watershed Sciences](#) is hosting a statewide [summit](#) at the State Capitol on April 25, which will bring together experts in water sciences, water management and policy to inform the state's response to the drought.

Thank you for all that you do for UC Davis, and I look forward to hopefully seeing you on Saturday, as we celebrate the 100th Picnic Day.

Sincerely,
Linda P.B. Katehi
Chancellor



VIDEO: Watch how UC Davis is turning kale into clean, renewable energy.

Why are the fountains off?



Water is a valuable natural resource that, right now in California, is in short supply. Throughout campus, UC Davis is working towards cutting back its water use wherever possible. For our Arboretum and Public Garden team, this includes decreasing irrigation to little-used lawn areas, improving our grounds with even more examples of waterwise, sustainable landscapes, and turning off our fountains. Although the water features at the UC Davis Arboretum Terrace Garden and Lois Crowe Patio recirculate and the water lost to evaporation is minimal, we are taking this opportunity to contribute to campus water-saving measures while calling attention to our state's drought condition.

For more ideas on ways you can save water in your landscape visit us at arboretum.ucdavis.edu.

UC DAVIS
CAMPUS RECREATION
AND UNIONS

SEVERE DROUGHT



PLEASE HELP US
CONSERVE
WATER

Examples of UCLA Outreach Materials

To the Campus Community:

Although we at UCLA have long recognized that water is a critical issue for our state, California is now experiencing a drought emergency.

In November, we announced UCLA's first [Grand Challenges project](#), which will make the Los Angeles region completely sustainable in water and energy without harming biodiversity by the year 2050. As I stated at that time, failure to take constructive action is not an option.

Anticipating California's water challenges, UCLA has already begun to [conserve and use water more efficiently](#), working toward the UC target to reduce potable water use per capita by 20 percent from 2000 levels. Through water recycling, high-efficiency fixtures, drought-tolerant landscaping and smart irrigation, we have reduced water use by more than 70 million gallons per year since 2000, and we will continue these efforts in accordance with UCLA's [2020 Water Action Plan](#).

In the years to come, we will install artificial turf on the Intramural Field, which will save 6.4 million gallons of water per year, and we will combine research and operations in projects like a [filtration system at the campus cogeneration plant](#) that will save the campus another 25.5 million gallons per year.

Given the severity of the drought, we have taken further steps to enhance our water conservation. We have reduced watering cycles and restricted watering of athletic fields and landscaping to before 9 a.m., and we will continue to reduce watering in select areas while taking care to minimize damage to our landscape. We also are working with the other UC campuses to identify additional immediate conservation measures.

Each of us must take action to address this statewide crisis. With 70,000 people at UCLA each day, our individual actions can make a tremendous collective difference. If you see water leaks, please [report them online](#) or by calling x59826. Please visit the [Be Water Wise website](#) for conservation tips, such as taking shorter showers (showers that are five minutes shorter can save 12 gallons of water), and turning off faucets while washing your hands (which can save a half-gallon per wash).

If everyone at UCLA reduced their water use by a gallon a day, we would save more than 25 million gallons a year. By changing our habits, we can address not only this year's drought but also the challenges that we know are coming.

Sincerely,
Gene D. Block
Chancellor

Examples of UC Merced Outreach Materials

FresnoBee.com

[Previous Story](#)

[Next Story](#)

Dorothy Leland: UC Merced aims high with water

By Dorothy Leland

Fresno March 19, 2014

[Facebook](#) [Twitter](#) [Google Plus](#) [Reddit](#) [E-mail](#) [Print](#)

Water is being discussed everywhere as California endures one of the worst documented droughts in decades. Now more than ever, it is critical to consider the full scope of water's significance — economic, geologic, political, socioeconomic and more — and the urgent need to make its conservation and management a top priority in our thirsty state.

At UC Merced, we take water seriously. From conserving water on campus through state-of-the-art technology to researching water quality and quantity, its effects on the environment, and resource management, we're proud to serve as a living laboratory for the San Joaquin Valley and its residents.

As educators, we must do everything we can to change daily habits related to water usage.

Resource conservation is part of our fabric. So it should come as no surprise that we welcomed University of California President Janet Napolitano's call to cut water consumption by 20% by 2020. In fact, we have already exceeded that expectation — this year.

Napolitano announced the new initiative to cut per-capita water use just after the first of this year, saying that as California experiences the driest winter on record, the UC must do its part to preserve the state's most precious natural resource.

UC Merced began slashing water usage long before even the specter of drought began to loom. As of the 2012-13 school year, UC Merced had reduced its per-capita water use by 43% since 2007.

UC Merced's design — from inception — has incorporated goals for both water and electricity usage that are 40% below baseline levels at other UC campuses. The campus infrastructure is designed to conserve water, from its native-plant landscaping and drought-resistant, permeable pavement to its storm-water retention.

The university's drinking, sewer and irrigation water are all carefully audited, and each building is individually metered so officials can see real-time usage. That metering system is also used each year for a residence-hall competition to see which building can cut the most water use. That competition was started by a student, and although he has since graduated, the effort continues.

Beyond best-practice conservation measures implemented throughout campus, our researchers are examining how changes in water amounts and availability are affecting a variety of environments from the coast to the Sierra Nevada peaks — above and under the ground.

Their research, both in the field and the lab, will help us better understand what to expect in the future and suggest solutions that could be undertaken now.

For example, reduced snowpack and lower precipitation throughout the state mean earlier soil drying and less water for irrigation and other basic needs. Researchers are working to discover the effects those factors will have not just at higher elevations, but all the way "downstream" to the Valley floor and its fragile agricultural ecosystem.

In addition, paleoecologist and professor Jessica Blois is scouring the Sierra Nevada fossil record to see what previous droughts can tell us about similar events today and in the future, and how they might affect plants and animals, including humans. Her work suggests our region's landscape and beyond could look much different in coming decades as plants and animals migrate to climates that better suit them.

This kind of research adds to the database that allows our researchers to model the large-scale and local impacts of multiyear droughts.

California's drought is a critical problem that will have immediate effects this year — including on the availability and prices of Valley produce — as well as a lasting legacy.

That's why we are stepping up our efforts to understand the impact of drought on our state's vitality while redoubling our own commitment to design and operate our facilities in a sustainable manner.

Every wasted drop of water is a drop we no longer can afford to lose.

UC Merced began slashing its water usage long before even the specter of drought began to loom. As of the 2012-13 school year, UC Merced has reduced its per-capita water use by 43% since 2007.

Dorothy Leland is chancellor of UC Merced.

[Facebook](#) [Twitter](#) [Google Plus](#) [Reddit](#) [E-mail](#) [Print](#)

Join The Conversation

The Fresno Bee is pleased to provide this opportunity to share information, experiences and observations about what's in the news. Some of the comments may be reprinted elsewhere in the site or in the newspaper. We encourage lively, open debate on the issues of the day, and ask that you refrain from profanity, hate speech, personal comments and remarks that are off point. Thank you for taking the time to offer your thoughts.

[Commenting FAQs](#) | [Terms of Service](#)

Today's Circulares



DELL US
VALID UNTIL MAR 31



BIG 5 SPORTING GOODS
2 DAYS LEFT



ORCHARD SUPPLY
2 DAYS LEFT



MUSICIAN'S FRIEND
VALID UNTIL MAR 31

[View All Circulares](#)

Examples of UC Riverside Outreach Materials

From: ucrfacultyandstaff-bounces@lists.ucr.edu [<mailto:ucrfacultyandstaff-bounces@lists.ucr.edu>] **On Behalf Of** Chancellor
Sent: Wednesday, February 26, 2014 12:33 PM
To: ucrfacultyandstaff@lists.ucr.edu; students@lists.ucr.edu
Subject: California Drought: Please Help Save H2O

Dear UCR Campus Community:

As you know, California and many Western states are suffering through an historic drought that is endangering wildlife, farming, and municipalities far and wide.

At UCR, we take our obligations to conserve water very seriously. Along with our sister UC campuses, we have implemented a Water Action Plan, and our sustainable practice policy requires a 20 percent reduction in use of potable water by the year 2020.

Currently, UCR uses 100% potable [drinking-quality] water for East Campus operations, while the Ag Ops area uses non-potable water for its research fields on the West Campus.

In coming months, we will switch irrigation for the Botanical Gardens from potable water to non-potable water – with an expected savings of 22 million gallons of drinking water per year. As we make the switch, we are seeking to implement further water conservation measures for the garden.

In addition, at selected sites on campus, we are replacing turf grass with alternative grass and/or drought resistant plantings to lesson watering needs. We are also replacing sprinkler irrigation systems with drip systems wherever feasible.

Last year, Housing and Dining Residential Services replaced more than 280 toilets in one apartment building (Oban), saving over 338,000 gallons a year through a City of Riverside rebate program. The methodical fixture replacement in campus apartments and residence halls is continuing.

Please also do your part to help conserve water – one of the irreplaceable resources we must steward for coming generations.

On or off the campus, here are some tips about how you can help:

- An average shower of 10 minutes in duration uses 25 gallons of water. You can reduce water use by taking shorter showers – or by turning off the water to lather and only turning the shower water on to wet and rinse.
- Reduce the number of toilet flushes as possible.
- Only run dishwashers with full loads – scrape instead of rinsing plates – if you wash by hand, use a basin for washing and another for rinsing. Use the rinse water to water plants afterwards.

- Bring a reusable bottle for drinking – it takes 3 times the amount of water in a plastic bottle of water to produce the plastic bottle

Thank you for your support in stewarding our water resources.

Sincerely,

Kim A. Wilcox
Chancellor

Examples of UC San Diego Outreach Materials

UC SAN DIEGO
CAMPUS NOTICE
University of California, San Diego

OFFICE OF THE CHANCELLOR

OFFICE OF THE VICE CHANCELLOR –
RESOURCE MANAGEMENT AND PLANNING

April 2, 2014

ALL ACADEMICS, STAFF AND STUDENTS AT UC SAN DIEGO

SUBJECT: UC San Diego's Commitment to Conserve Water through Drought Action Plan

Sustainability is an integral part of UC San Diego's education, research and campus operations. Given that UC San Diego is located in a semi-arid climate, our campus has long had ambitious water-saving goals. Now, with California experiencing a drought emergency, the university and each of us as individuals must take even greater action to reduce our water consumption to the greatest extent possible.

The campus already saves millions of gallons of water annually through implementation of a comprehensive Water Action Plan. The plan focuses on a variety of conservation measures and details how we are working toward the University of California goal to reduce campus-wide potable water use by 20 percent from our baseline by 2020. Under the plan, we have:

- Retrofitted existing irrigation systems with low-flow devices, resulting in an annual savings of 7.2 million gallons in irrigation water used.
- Included water-saving features in the design of new buildings that will save approximately 1.5 million gallons per year.
- Installed computer-controlled irrigation systems that have the potential to save more than 100 million gallons of water annually.
- Utilized fire hydrant testing water at the Central Utilities Plant for the cooling towers, resulting in saving approximately 300,000 gallons per year.
- Installed laminar water flow devices in nearly 1,000 faucets at the Hillcrest Medical Center, saving approximately 2 million gallons annually.

- Installed low-flow water fixtures and native or drought tolerant vegetation in all new construction and installed low-flow water fixtures in the majority of existing campus residential facilities. All design guidelines and neighborhood plans specify low water sustainable landscape practices.

These are just a few of the steps we have taken to conserve water. Given the severity of the current situation, further action is needed. UC San Diego – and the University of California Office of the President and our sister campuses – are committed to additional drought response measures.

In the months ahead, we will undertake a variety of projects that could further reduce potable water consumption by approximately 200 million gallons a year. These include the installation of more high-efficiency fixtures and low-flow devices, using reclaimed water at the East Campus Utilities Plant, the installation of artificial turf at Muir Field, and a planning study to outline and set standards for the reduction of water use through design for the entire campus, as well as various other projects.

We are also asking members of the campus community to take action. What each of us does individually can add up to make a collective difference. If you see a water leak, report it online at wsc@ucsd.edu or call (858) 534-2930. Turn off faucets while washing your hands and try trimming a minute or two off your shower. You can learn more water-saving tips by visiting [sustainability.ucsd.edu](http://www.watersmartsd.org) or <http://www.watersmartsd.org>

If everyone at UC San Diego reduced their water use by a gallon a day, we would save more than 18 million gallons a year. Changes in our daily habits are essential if we are to successfully face the water challenges ahead.

Pradeep K. Khosla
Chancellor

Gary C. Matthews
Vice Chancellor -
Resource Management and Planning

Examples of UC San Francisco Outreach Materials



Campus Life Services

500 Parnassus Avenue
MU 125 West, Box 0232
San Francisco, CA 94143-0232
tel: 415/502-4457
fax: 415/476-3765

February 18, 2014

Dick Chan, Director – Medical Center Facilities
Kevin Cox, Director – Transportation Services
Frances Denoto-Reynolds, Lab Manager – Diabetes Center
Susanne Hildebrand-Zanki, Associate Vice Chancellor - Research
Michael Hindery, Vice Dean – School of Medicine
Lynda Jacobsen, Associate Dean – Administration & Finance, School of Nursing
Winifred Kwofie, Associate Director – Facilities Services
Larry Laidlaw, Superintendent – Facilities Services
Dexter Lee, Superintendent – Facilities Services
Bruce Mace, Director – Medical Center Facilities
Millicent Magiera, Interim Associate Director – Facilities Services
Gail Mametsuka, Manager – Fitness and Recreation
Michael Nordberg, Associate Dean – School of Pharmacy
Leslie Santos, Director – Housing Services
Susan Schultz, Associate Dean – School of Dentistry
Julie Sutton, Supervisor – Facilities Services
Zach Quan, Interim Associate Director – Facilities Services

Re: UCSF Drought Emergency Task Force

Colleagues:

On January 17, 2014, Governor Brown declared a drought state of emergency for California. As a result of this emergency, we are requesting that you, or your designee, serve on the UCSF Drought Emergency Task Force. The UCSF Sustainability Committee and the campus and medical center facilities departments have had their attention on campus water consumption reduction issues for some time and have been implementing water efficiency projects across our enterprise. A recent UCSF News article titled “UCSF Ahead of Curve in Water Conservation” (located at: [UCSF News Article on Water Conservation](#)) features steps that have already been taken to reduce our water consumption.

Due to the drought emergency, we need to have a collaborative and organized effort to address enhanced attention to water conservation efforts across the University. Your role in this effort is to help identify all possible areas where water conservation can be implemented – especially key emergency measures that will assist during the statewide drought. We will also consider which of the emergency measures could be made permanent even after the drought emergency has subsided. Documentation will also be a key component of this Task Force as we need to report all activities to UCOP. For your reference, information on the Governor’s declaration can be found here: [Governor Brown declares State of Emergency](#).

This Task Force includes representatives from the following organizations: Campus Life Services (Housing, Transportation, Fitness & Recreation, and Facilities Services), each of the Schools, Research Services, and also the Medical Center.

A Task Force meeting will be scheduled in early March and will be co-chaired by Jon Giacomi, Deputy Director – Facilities Services and Gail Lee, Sustainability Manager. Please bring your ideas and suggestions to that meeting to better guide our discussion. An agenda will be sent out prior to the meeting.

Please either confirm your participation, or send the name of your appointed designee to Janie.Pena@ucsf.edu by February 24, 2014. After membership is confirmed, a date will be scheduled for the first meeting.

Thank you for your willingness to support this University and statewide effort.



Leigh Morgan
Associate Chancellor
UC San Francisco (UCSF)



Angela Hawkins
Associate Vice Chancellor
UCSF, Campus Life Services

cc: Jeff Bluestone, Executive Vice Chancellor and Provost
John Plotts, Senior Vice Chancellor – Finance and Administration
Maric Munn, Director – Facilities Services
Jon Giacomi, Deputy Director – Facilities Services
Gail Lee, Sustainability Manager – Chancellor’s Office

We're in a water crisis.

Join the water saving efforts and reduce your water usage by **20%**. Save gallons today by following these simple steps:

1

Limit your shower time to 5-minutes or less.



2

Report water leaks to facilities management.



3

Use the dishwasher rather than hand washing dishes.



4

Turn the water off while brushing your teeth.



UCSF WATER CONSERVATION STRATEGY

The state of California has declared a state of emergency due to extreme drought conditions which necessitates that we take every precaution to avoid the wasting of water.

To learn more, visit livinggreen.ucsf.edu

How are you LivingGreen? Share your experience with [#UCSFLivingGreen](https://twitter.com/UCSFLivingGreen)



Examples of UC Santa Barbara Outreach Materials

TO THE CAMPUS COMMUNITY

Dear Colleagues and Students:

We at UC Santa Barbara have long recognized that water is a critical resource for the state of California. Despite the recent rains, California is currently experiencing a drought emergency. We ask that you continue to help us reduce our consumption and do our part to conserve.

We have pursued aggressive water conservation strategies for almost two decades in the following areas: academic buildings, residential and dining facilities, industrial applications, and landscaping and irrigation practices. These efforts have not only allowed us to achieve a 25 percent reduction in total potable water use (74 million gallons) from 1996 to 2011, but have made UCSB a leader in water conservation among institutions of higher education. In February of 2013, we developed our first Water Action Plan as the official guidance document for water conservation strategies on our campus, identifying recommendations in short-, mid- and long-term planning horizons. Our preparation on this front has allowed us to take action by identifying immediate practices for reducing water consumption on campus and minimizing the stress on our local water supplies.

About 90 percent of our campus landscapes are irrigated with reclaimed water, and irrigation practices in the remaining areas will either be completely turned off for the duration of the drought, or reduced by 50 percent until a recycled water line can be extended to service those areas. This summer we will be extending our recycled water line to more than six new locations, increasing our reclaimed water use for irrigation on campus. In

addition, we have also secured funding for retrofitting restrooms with more efficient water fixtures, which will include the installation of in-line aerators and high-efficiency toilets in the coming months.

To alleviate the urgency of the drought conditions, we would also like to ask our campus community to use less water in your daily routines, such as taking shorter showers in the residence halls and making a conscious effort to utilize the dual-flush toilets properly. The majority of potable water consumed on our campus is for domestic uses such as toilets, faucets and showers. The conservation efforts of our students, faculty and staff are going to be an essential part of our response to the drought. A coordinated public awareness campaign will also soon be launched with information about additional simple actions that all of us can take to conserve water.

While we have made tremendous strides in reducing our potable water consumption through the introduction of new and innovative water conservation and efficiency practices, we will continue to take proactive steps to conserve water well into the future.

At UC Santa Barbara, we fully recognize the worth of our water resources. Through proper planning and foresight, and through all of our collaborative efforts, we are committed to never allowing the well to run dry.

Sincerely,

Henry T. Yang
Chancellor

What's YOUR Water Footprint?

California is projected to have the driest year on record in 2014.

Here's how you can reduce your Water Footprint:

- 💧 A 10-minute shower uses **17.5** gallons of water. Take a 5-minute shower instead, which only uses **8.75** gallons.
- 💧 If you notice a leaky faucet or shower head, report it through a work order to fix it. **Leaks add up over time!**
- 💧 Turn the sink off while you are brushing your teeth or shaving, and while you scrub dishes.
- 💧 Don't use the toilet as a trash can.
- 💧 Only do laundry when you have a **full load**. Combining half loads with a buddy conserves water.





Water Is Precious

Like you, Housing and Residential Services is doing its part to conserve water. As part of our environmental commitment, we have installed “Shower Coaches” to help save water. Thanks for being part of the solution!



Take the Perfect 5 Minute Shower!

To Start: Rotate the Shower Coach Half a Turn.

4 Minutes = Showering Time

1 Minute = Rinse Time

Save Water!

Save Energy!

Reduce Greenhouse Gases!



TURN IT OFF

...While shaving

...While brushing your teeth

...While using soap

AND REMEMBER

Report Leaks to the Front Desk

California is in a drought. Conserving water helps your state, and it can even help your hall win the water competition. Only run the tap when you need to.

TURN IT OFF

...While shaving

...While brushing your teeth

...While using soap

AND REMEMBER

Report Leaks to the Front Desk

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...While using soap

AND REMEMBER

Report Leaks to the Front Desk

California is in a drought. Conserving water helps your state, and it can even help your hall win the water competition. Only run the tap when you need to.

Examples of UC Santa Cruz Outreach Materials

From: Chancellor George Blumenthal <chancellor@ucsc.edu>
Subject: California's water crisis
Date: February 4, 2014 2:18:13 PM PST
To: undisclosed-recipients;;
Bcc: staff@ucsc.edu

Unit Managers: Please post a paper copy of this message in your area for people who do not have regular computer access.

February 4, 2014

To: UCSC Community
From: Chancellor George Blumenthal
Re: California's water crisis

As I'm sure you know, California is in the throes of a serious drought.

Representatives from every local water agency gathered last week, collectively calling attention to a situation that becomes more worrisome with each passing sunny day ([see Santa Cruz Sentinel story](#)). In support of Gov. Brown's recent designation of a statewide drought, members of the Santa Cruz City Council have asked residents to voluntarily reduce water consumption by 20 percent.

As members of the Santa Cruz community, it's critical that we participate in the city's call for this reduction.

Many of you may have already taken steps in recent weeks or months to reduce your water intake. Whether you live on campus or off, there are a number of ways you can do so; tips are available online [at this campus web site](#). Imagine the collective impact if we all step up to this challenge. It would make a real difference.

Institutionally, the campus has integrated water conservation into our campus planning efforts and [sustainability goals](#), and we are committed to meeting UC's [systemwide goals](#) for water use.

Water is precious, and this drought serves to remind us of the necessity to use it wisely. With no relief in sight, please do your part to immediately reduce demand on the city's water system. Thank you.